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FISHER'S THEORY OF CRISES: A CRITICISM

SUMMARY

The sequence of events leading up to a crisis, 95. — Interest as a factor in cost of production, 96. — A comparison of interest rates and commodity prices, 97. — Two-fold demand for loans causes rapid rise of interest, 98. — Increase in profits due to lagging behind of cost of production, 101. — Disappearance of profits due to increased cost of production, 102. — No automatic check to prosperity in rise of virtual interest rates, 104.

THE greater part of the literature on the subject of crises is disheartening reading because of the vagueness of the terms employed and the care with which the crucial question is evaded, — what brings prosperity to an end? Professor Fisher, however, in his excellent book, *The Purchasing Power of Money*, has met the issue squarely and has presented his views in his usual interesting style. Hence his theories as to the relation between interest and crises are worthy of careful consideration and frank discussion. The sequence of events leading up to the crisis he states as follows: —

(1) Prices rise (whatever the first cause may be; but we have chosen for illustration an increase in the amount of gold).

(2) The rate of interest rises, but not sufficiently.

(3) Enterprisers (to use Professor Fetter's term), encouraged by large profits, expand their loans.

(4) Deposit currency (M') expands relatively to money (M).

(5) Prices continue to rise, that is, phenomenon No. 1 is repeated. Then No. 2 is repeated, and so on.

In other words, a slight initial rise of prices sets in motion a train of events which tends to repeat itself. Rise of prices generates rise of prices, and continues to do so as long as *the interest rate lags behind its normal figure*.¹

In the above scheme, the rate of interest figures in two ways: because the rate of interest lags behind

¹ Fisher, *The Purchasing Power of Money*, p. 60.

prices, profits increase and loans are encouraged; and because the rate of interest ceases to lag behind its normal figure, the enlarged profits disappear, loans are discouraged, and the rise of prices is checked.

Taking up the first statement, that interest lags behind prices in the upward movement, I hold that it may, on the contrary, take the lead. It may be well to state that no exception is taken to the theory that during a period of prosperity the interest rate may lag behind prices in the sense that the relations between debtor and creditor are changed; that the rate of interest may not rise sufficiently to compensate the creditor for the lessened purchasing power of money.¹ But that is another matter. Professor Fisher in the sequence of events just quoted is using interest as a factor in the cost of production. He says: —

Among his [the business man's] costs is interest, and this cost will not, at first, rise. Thus the profits *will* rise faster than prices. Consequently, he will find himself making greater profits than usual, and be encouraged to expand his business by increasing his borrowings.²

The business man concerns himself practically not at all with virtual interest rates (that is, interest expressed in commodities). But he is vitally interested in the changes in nominal rates of interest. If interest charges form only a small proportion of his cost of

¹ "To all intents and purposes, therefore, when A borrows one hundred dollars from B in order to purchase, say, one hundred units of a given commodity at one dollar per unit, it may be said that B is virtually lending A one hundred units of that commodity. And if at the end of a year A returns one hundred dollars to B, but the price of the commodity has meanwhile advanced, then B has lost a fraction of the purchasing power originally loaned to A. For even tho A should happen to return to B the identical coins in which the loan was made, these coins represent somewhat less than the original quantity of purchasable commodities. Bearing this in mind in our investigation of interest rates, let us suppose that prices are rising at the rate of 3 per cent each year. It is plain that the man who lends \$100 at the beginning of the year must, in order to get 5 per cent interest in purchasing power, receive back both \$103 (then the equivalent of the \$100 lent) plus 5 per cent of this or a total of \$108.15. That is, in order to get 5 per cent interest in *actual purchasing power*, he must receive a little more than 8 per cent interest in money. The 3 per cent rise of prices thus ought to add approximately 3 per cent to the rate of interest." Pp. 56-57.

² P. 59.

production, a marked rise in the rate would not greatly affect his profits; but if interest formed a large proportion of his cost of production, even a small increase in the nominal rate would cut heavily into profits or cause them to disappear altogether.

At any rate, putting interest rates and commodity prices on a comparative basis, their index numbers show that interest as a cost of production in many instances rises more rapidly than do commodity prices. For example, it is shown in Table I (below), before the crisis of 1883 in Germany, credit accommodations which in 1879 cost the business man \$100.00 would in 1880 cost \$114.60; in 1881, \$119.80; in 1882, \$122.60; and in 1883, \$109.20. This represents an increase in interest charges of from 9 to 22 per cent, whereas the rise in commodity prices during this period did not exceed $4\frac{1}{2}$ per cent.

An examination of five crises in Germany and six in England does not bring to light any uniform tendency for interest as a cost of production to lag behind prices. Summarizing the results of Tables I and II, it is found that in the eleven crisis periods cited, in which prices were rising, the more frequent case was that nominal interest rates rose more rapidly than prices, as follows:—

Interest rose more rapidly than prices in:—

The year of the crisis				11	times out of 11			
The year before				“	10	“	“	“ 11
2nd	“	“	“	“	7	“	“	“ 11
3rd	“	“	“	“	6	“	“	“ 9
4th	“	“	“	“	2	“	“	“ 5
5th	“	“	“	“	1	“	“	“ 3
6th	“	“	“	“	2	“	“	“ 2
7th	“	“	“	“	0	“	“	“ 2

39 times out of 54

The explanation for the rapid rise in interest rates is to be found in part in the two-fold demand for loans. A rise in interest rates, ordinarily speaking, is due to an increased demand for loans. If the increased purchasing power obtained through these loans were wholly employed to increase the demand for commodities, as Professor Fisher implies, prices might always advance more rapidly than interest charges. But there is, during periods of prosperity, a very large and growing demand for loans, which from their use can contribute only remotely if at all to the rise of commodity prices. In so far as the stock exchange brings the promoter and investor together, it does tend to foster promotion, hence to increase the demand for goods and thus contribute to the rise of commodity prices. But there is a great mass of gambling, of speculative buying and selling for local and arbitrage business, manipulation for purposes of control, and the like, all of which require heavy loans, and yet in no way does the credit so employed contribute to the movement of commodity prices. The demand for loans for such purposes, however, affects the rate of interest as truly as does demand for loans for strict commercial enterprises. I hold that the relative movements of interest and commodity prices during these transition periods cannot rightly be interpreted without taking into account this other demand for credit, a demand which often reaches enormous proportions.¹

If the increase in profits in many lines of business which follows a rise of prices is not due to the lagging behind of interest rates, its origin must be sought elsewhere. Is it not the lagging of the cost of pro-

¹ Cf. Minnie Throop England, "Statistical inquiry into the influence of credit upon the level of prices," *University Studies* (University of Nebraska), January, 1907.

TABLE I¹A COMPARISON OF INTEREST RATES AND COMMODITY PRICES
IN GERMANY PRECEDING FIVE CRISES

Year	Rate of Discount		Prices	
	Per cent	Index number	Soetbeer's	Index Number
1851	4 000	100.0	82.8	100.0
1852	4 000	100.0	84.1	101.6
1853	4.197	104 9	94.0	113.5
1854	4 359	109.0	100.2	121 0
1855	4.075	101.9	102.7	124.0
1856	4.933	123.3	101.9	123.1
1857 crisis	5.754	143 8	107.5	129.8
1861	4 000	100 0	97 6	100.0
1862	4.000	100.0	101.4	103.9
1863	4.081	102.0	103.7	106.1
1864	5.306	132.6	106.9	109 5
1865	4.981	124.5	101.4	103.9
1866 crisis	6.168	154.2	104.0	106 4
1868	4.000	100 0	100.8	100.0
1869	4.241	106 0	102.0	101.2
1870	4 907	122.7	101.6	100.8
1871	4.160	104 0	105.0	104.1
1872	4.290	107.2	112.0	111.1
1873 crisis	4.956	123.9	114 3	113.4
1879	3.700	100.0	96.8	100.0
1880	4.240	114.6	100 8	104 1
1881	4 433	119.8	100.1	103.4
1882	4 538	122.6	101.0	104.3
1883 crisis	4.041	109.2	101.0	104.3
1887	3.408	100.0	84.3	100.0
1888	3 321	97.4	84.3	100.0
1889	3 671	107.7	87.7	104.0
1890	4.519	132 6	89 4	106.0
1891 crisis	3.786	111.1	90.3	107.1

¹ Table I is prepared from Soetbeer's Relative Prices in Hamburg, and from Palgrave's Bank Rate (p. 157), from which the average daily rate of discount of the Imperial Bank of Germany is computed.

TABLE II¹

A COMPARISON OF INTEREST RATES AND COMMODITY PRICES
IN ENGLAND PRECEDING SIX CRISES

Year	Rate of Discount			Index number	Prices	
	l.	s.	d.		Sauerbeck's	Index number
1849	2	18	7	100.0	74	100.0
1850	2	10	1	83.1	77	104.1
1851	3	0	0	119.4	75	101.3
1852	2	3	0	85.6	78	105.4
1853	3	13	10	150.3	95	128.4
1854	5	2	3	203.1	102	137.8
1855	4	17	10	194.7	101	136.5
1856	6	1	2	241.1	101	136.5
1857 crisis	6	13	3	265.2	105	141.9
1858	3	4	7	100.0	91	100.0
1859	2	14	7	74.9	94	103.3
1860	4	3	7	114.6	99	108.8
1861	5	5	4	167.3	98	107.7
1862	2	10	7	60.9	101	110.9
1863	4	8	2	120.9	103	113.2
1864	7	8	0	200.7	105	115.3
1865	4	15	4	130.7	101	110.9
1866 crisis	6	19	0	190.6	102	111.9
1870	3	2	0	100.0	96	100.0
1871	2	17	8	93.0	100	104.2
1872	4	2	0	132.2	109	113.7
1873 crisis	4	15	10	154.5	111	114.8
1879	2	10	4	100.0	83	100.0
1880	2	15	4	109.9	88	106.0
1881	3	10	0	139.1	85	102.4
1882	4	2	8	164.2	84	101.2
1883 crisis	3	11	4	141.7	82	98.8
1887	3	7	0	100.0	68	100.0
1888	3	5	11	98.4	70	102.9
1889	3	10	11	115.8	72	105.8
1890 crisis	4	10	5	134.6	72	105.8
1896	2	9	8	100.0	61	100.0
1897	2	12	8	106.0	62	101.6
1898	3	4	10	130.5	64	104.9
1899	3	15	0	151.0	68	111.5
1900 crisis	3	19	6	160.1	75	122.9

¹ Table II is prepared from Sauerbeck's Relative Prices in England, and from Palgrave (p. 15) which gives the annual average minimum rate of discount of the Bank of England. The year of lowest prices preceding a crisis is taken as the basic number 100 (this is true of Table I, also), and varies from three to nine years before the crisis.

duction behind the price of the finished product that gives rise to enlarged profits? Any increased demand for goods causes a rise of prices, but not a uniform rise throughout the entire field (not even when the larger demand is due to increased gold supplies), hence the prices of finished products and raw materials, for example, are not uniformly increased. Demand always picks out specific commodities, causes the price of these commodities to rise relatively to other commodities. The price of raw materials in some lines may rise more rapidly than the price of the finished product and thus tend to decrease profits; the price of the finished product in another line may rise faster than the price of raw materials and a margin for enlarged profits appear. The same is also true of such costs of production as rents and wages.

Therefore it would be as fitting to substitute for interest in sequence 2 of Professor Fisher's theory, any other one of the elements that go to make up the cost of production as to leave interest to fill that place alone. We could as well say (1) prices rise, (2) the cost of raw materials rises but not as much as the prices of finished products, hence profits are large, and (3) enterprisers are encouraged by large profits to expand their loans, and so on; or we could say (1) prices rise, (2) wages rise, but not as much as prices, hence profits are large, — and so on. It is surely misleading to ascribe the increase in profits resulting from an enlarged demand for goods solely to the lagging behind of interest charges, since any one or all of the factors of cost of production may be the laggard or laggards.

If it is true that the increase in profits during a period of rising prices is due to the fact that the cost of production does not increase as rapidly as the price of the finished product, then Professor Fisher's second prop-

osition, that the enlarged profits disappear when interest rates have overtaken prices, becomes illogical. It must be amended by saying that the enlarged profits disappear when the rise in the cost of production has overtaken the rise in the price of the finished product. I believe that more light can be thrown upon profits by studying the relative movement of the prices of raw materials and finished products than can be obtained by comparing interest rates and prices. An examination of trade reports from fifty-three different industries in Germany for 1906,¹ the year before the crisis, gives results as follows: 26 complain of small or reduced profits; 7 speak of a lessened demand for products; 11 mention keen or excessive competition; 28 refer to unsatisfactory prices, implying that the price of the finished product cannot be pushed up to compensate for the higher cost of production; 1 cites the high cost of production; 5 complain of strikes or labor troubles, 8 mention reduction in hours of labor, 9 refer to a scarcity of labor, and 25 speak of a rise in wages. Only 4 mention the rise in interest rates, while 43 speak of the rise in the prices of raw materials.

Professor Fisher fixes the point at which interest rates become prohibitive, thus bringing prosperity to an end, as the point when the interest rate reaches its normal figure, — that is, the rate which would exist were prices stationary.² But during a period of prosperity comparatively little attention is paid to the relation between the rate of interest and present or past earnings of capital; but borrowings for new and speculative undertakings will continue until the rate of interest is equal to or greater than the expected rate of future returns. This point may be higher or lower than that set by the normal rate of interest.

¹ From U. S. Monthly Consular and Trade Reports, July–October, 1907.

² P. 58.

What of investors who believe prospectuses that promise a return of 50 per cent or even 75 per cent! Professor Fisher overlooks the fact that promotion often becomes a mania when he says: "As soon as the interest rate becomes adjusted, borrowers can no longer hope to make great profits, and the demand for loans ceases to expand."¹ Investors often keep on hoping for large returns even tho everything points to low.

In addition, interest rates in many cases do not reach their normal figure, altho they may rise very rapidly as a cost of production, until after the crisis is on, and hence they cannot be the check to prosperity that Professor Fisher has described when he says that "rise of prices generates rise of prices and continues to do so as long as the interest rate lags behind its normal figure." In other words, he says that as long as virtual interest rates (rates measured in commodities) are abnormally low, prosperity will continue.

An examination of Tables III and IV, which compare nominal and virtual interest rates for various crisis cycles, reveals the fact that sometimes a crisis occurs even tho virtual interest rates are abnormally low, as in 1873 in Germany and England, or in 1900 in the latter country. It is found also that prosperity may continue for several years after virtual interest rates are high, as in the crisis of 1883 in England. The rise of virtual interest rates might be the check to prosperity in some cases, but in many it clearly is not. It is not until after the crisis begins that there is a uniform tendency for virtual interest to overtake the nominal. In 8 out of 11 crises, virtual interest, during the crisis year, is lower than the nominal rate; during the year after the crisis, virtual interest is higher than

¹ P. 64.

the nominal in 8 cases out of 9. It looks as if it could more properly be said that the rapid rise of virtual interest rates was due to the stoppage of prosperity, than that the check to prosperity comes from the rise of virtual interest rates.

TABLE III

A COMPARISON OF NOMINAL AND VIRTUAL INTEREST RATES
IN GERMANY¹

Year	Per cent rise of prices	Nominal interest	Virtual interest
1854	6.6	4 3	-2.3
1855	2.4	4.0	1.6
1856	- .8	4.9	5.7
1857 crisis	5.5	5 7	.2
1858	-12.8	4.1	16.9
1863	2.1	4.1	2.0
1864	3.2	5.3	2 1
1865	-5.1	5.0	10.1
1866 crisis	2.4	6.1	3.7
1867	-1.1	4.0	5.1
1870	- .4	4.9	5.3
1871	3.3	4.1	.8
1872	6.6	4.3	-2.3
1873 crisis	2.5	5.0	2.5
1874	-2.0	4.4	6.4
1880	4.1	4.2	.1
1881	- .7	4.4	5.1
1882	.9	4.5	3.6
1883 crisis	.0	4.0	4.0
1884	-6.6	4 0	10.6
1888	.0	3.3	3.3
1889	4.0	3 6	- .4
1890	1.9	4.5	2.6
1891 crisis	1.1	3.7	2.7

¹ The minus sign in the second column indicates a fall of prices. The same method of computing virtual interest is employed in Tables III and IV that Professor Fisher has used for the crisis of 1907 (page 271), that is, the per cent of rise of prices is subtracted from the nominal interest rate to obtain virtual interest. The prices and rates of these tables are obtained from the same sources as Tables I and II above.

TABLE IV
A COMPARISON OF NOMINAL AND VIRTUAL INTEREST RATES
IN ENGLAND

Year	Per cent rise of prices	Nominal interest	Virtual interest
1854	7.3	5.1	-2.2
1855	-1.0	4.9	5.9
1856	.0	6.0	6.0
1857 crisis	4.0	6.6	2.6
1858	-13.3	3.2	16.5
1863	2.0	4.4	2.4
1864	2.0	7.4	5.4
1865	-3.8	4.8	8.6
1866 crisis	1.0	6.9	5.9
1867	-1.8	2.5	4.3
1870	-2.0	3.1	5.1
1871	4.1	2.9	-1.2
1872	9.0	4.1	-4.9
1873 crisis	1.8	4.8	3.0
1874	.8	3.7	4.5
1880	6.0	2.8	-3.2
1881	-3.4	3.5	6.9
1882	-1.2	4.1	5.3
1883 crisis	-2.4	3.6	6.0
1884	-7.3	2.9	10.2
1887	-1.4	3.3	4.7
1888	2.9	3.3	.4
1889	2.8	3.5	.7
1890 crisis	.0	4.5	4.5
1891	.0	3.2	3.2
1897	1.6	2.6	1.0
1898	3.2	3.2	.0
1899	6.2	3.7	-2.5
1900 crisis	10.3	4.0	-6.3

It is not intended to minimize the value of a study of the relation between interest and crises. But surely Professor Fisher has both exaggerated the importance and mistaken the nature of the relation between the

two when he endeavors "to show that the peculiar behavior of the rate of interest during transition periods is largely responsible for the crises and depressions in which price movements end." The value of his book cannot be questioned, but its strongest features, I believe, lie outside the field of crises.

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